

M A T E R I A L S A F E T Y D A T A S H E E T

Rec 3-10-87

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 87451

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PRODUCT NAME: CHLOROTHENE (R) SM SOLVENT - CP

Effective Date: 10/04/85 Date Printed: 03/05/87

MSD: 001111

1. INGREDIENTS:

1,1,1-Trichloroethane	CAS# 000071-55-6	95.5%
1,2-Butylene oxide	CAS# 000106-88-7	
Diethylene Ether	CAS# 000123-91-1	
Nitromethane	CAS# 000075-52-5	

The hazard information presented is based on tests conducted on this or similar mixtures. Therefore, pursuant to the OSHA Hazard Communication Standard (see 29 CFR Part 1910.1200 (g)(2)(b)), the information is based on the tested mixture and not individual ingredients.

2. PHYSICAL DATA:

BOILING POINT: 165F (74C)
VAP PRESS: 100 mmHg @ 20C
VAP DENSITY: 4.55
SOL. IN WATER: 0.07 g/100g @ 25C
SP. GRAVITY: 1.321 @ 25/25C
APPEARANCE: Colorless liquid.
ODOR: Irritating odor at high concentrations.

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: None
METHOD USED: TOC, TCC, COC

FLAMMABLE LIMITS
LFL: 7.5% @ 25C
UFL: 15% @ 25C

EXTINGUISHING MEDIA: Water fog.

FIRE & EXPLOSION HAZARDS: Not available.

FIRE-FIGHTING EQUIPMENT: Self-contained, positive pressure respiratory equipment.

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Avoid open flames, welding arcs or other high temperature sources which induce thermal decomposition.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Water - long term contact can deplete stabilizers followed by slow

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4. REACTIVITY DATA: (CONTINUED)

hydrolysis producing corrosive acid. Avoid prolonged contact with, or storage in, aluminum or its alloys. Metallic aluminum and zinc powders should be avoided.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride and very small amounts of phosgene and chlorine.

HAZARDOUS POLYMERIZATION: Will not occur.

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Small leaks: Mop up, wipe up, or soak up immediately. Remove to out-of-doors. Large spills: Evacuate area. Contain liquid; transfer to closed metal containers. Keep out of water supplies.

DISPOSAL METHOD: When disposing of the unused contents, the preferred options are to send to licensed reclaimer, permitted incinerators, or to evaporate small quantities in compliance with local, state, and federal regulations including Subtitle C of the Resource Conservation and Recovery Act. Dumping into sewers, on the ground, or into any body of water is strongly discouraged, and may be illegal. Consult The Dow Chemical Company for further information.

6. HEALTH HAZARD DATA:

EYE: May cause pain. May cause slight transient (temporary) irritation with slight transient corneal injury. Vapors may irritate eyes.

SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation. Repeated contact may cause drying or flaking of skin.

SKIN ABSORPTION: A single prolonged skin exposure is not likely to result in absorption of harmful amounts. The LD50 for rabbits is about 15,000 mg/kg.

INGESTION: Single dose oral toxicity is low. The LD50 for rats is 10,000 mg/kg. If aspirated (liquid enters the lung), may be rapidly absorbed through the lungs and result in injury to other body systems.

INHALATION: Minimal anesthetic or narcotic effects may be seen

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6. HEALTH HAZARD DATA: (CONTINUED)

in the range of 500-1000 ppm trichloroethane. Progressively higher levels over 1000 ppm may cause dizziness, drunkenness; concentrations as low as 10,000 ppm can cause unconsciousness and death. In confined or poorly ventilated areas, vapors which readily accumulate can cause unconsciousness and death. These high levels may also cause cardiac arrhythmias (irregular heartbeats).

SYSTEMIC & OTHER EFFECTS: Based on available data, repeated exposures are not anticipated to cause any significant adverse effects. Similar formulations did not cause cancer in long-term animal studies. Birth defects are unlikely. Exposures having no adverse effects on the mother should have no effect on the fetus. In animal studies, has been shown not to interfere with reproduction. Results of in vitro ("test tube") mutagenicity tests have been inconclusive. Results of mutagenicity tests in animals have been negative.

7. FIRST AID:

EYES: Irrigate immediately with water for at least 5 minutes.

SKIN: Wash off in flowing water or shower. Remove contaminated clothing and wash before reuse.

INGESTION: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

INHALATION: Remove to fresh air. If not breathing, give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. Call a physician.

NOTE TO PHYSICIAN: Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by an attending physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Exposure may increase "myocardial irritability." Do not administer sympathomimetic drugs unless absolutely necessary. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

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8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE(S): 1,1,1-Trichloroethane - OSHA standard is 350 ppm and current ACGIH TLV is 350 ppm (450 ppm STEL).

ACGIH TLV is 25 ppm skin for diethylene ether; the STEL is 100 ppm. OSHA PEL is 100 ppm skin for diethylene ether. Dow Industrial Hygiene Guide for 1,2-butylene oxide is 40 ppm (excursion 100 ppm). ACGIH TLV for nitromethane is 100 ppm with a STEL of 150 ppm.

VENTILATION: Control airborne concentrations below the exposure guideline. Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Lethal concentrations may exist in areas with poor ventilation.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved positive pressure self-contained breathing apparatus.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full body suit will depend on operation.

EYE PROTECTION: Use safety glasses. Where contact with liquid is likely, chemical goggles are recommended because eye contact with this material may cause pain, even though it is unlikely to cause injury.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Handle with reasonable care. Avoid breathing vapors. Store in a cool dry place. Concentrated vapors of this product are heavier than air and will collect in low areas such as pits, degreasers, storage tanks, and other confined areas. Do not enter areas where vapors of this product are suspected unless special breathing apparatus is used and an observer is present for assistance.

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9. ADDITIONAL INFORMATION: (CONTINUED)

1,1,1-Trichloroethane products should not be packaged in aluminum aerosol cans or with finely divided aluminum or its alloys in an aerosol can.

Aluminum is not an acceptable material of construction for pumps, mixers, fittings, storage tanks for 1,1,1-trichloroethane products or formulations. Metallic aluminum and zinc powders should be avoided. For additional information on toxicity, handling precautions, and first aid, refer to chlorinated solvents literature form no. 100-5792.

MSDS STATUS: Revised sections 1, 5, 6, 8, and 9.

The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.